

REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicants basically:

1. Editorially amend the specification.
2. Editorially amend all claims for better conformance to U.S. practice.
3. Add new claims 12 - 15.
4. Request acknowledgement of the applicant's claim for priority.
5. Respectfully traverse all prior art rejections.
6. Advise the Examiner of the simultaneous filing of a Petition to Extend.

B. THE NEW CLAIMS

New dependent claims 12 – 13 and 15 concern using the sum radiation diagram to determine a direction of arrival of the analog signals received by the antenna array. It is understood from Applicant's specification that a purpose of Applicant's method and apparatus is to obtain a sufficiently narrow main lobe to get a good estimation of the direction of arrival. *See*, e.g., page 4, lines 6 – 9 and the discussion and formula residing at the top of page 6 of the specification.

New independent claim 14 is directed to a computer program product comprising instructions stored on a storage medium which, when executed, performs some of the acts of independent claim 1. Support for a computer program product claim resides, e.g., in Fig. 11 and text describing same as well as in the last full paragraph of page 21 of the specification.

C. PATENTABILITY OF THE CLAIMS

Claims 1 - 12 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,973,638 to Robbins in view of U.S. Patent 6,351,243 to Derneryd et al. All prior art rejections are respectfully traversed for at least the following reasons.

U.S. Patent 5,973,638 fails to teach or suggest a solution comprising the combination of features in the present independent claims 1, 7, and 14. Moreover, U.S. Patent 6,351,243 does not help a person skilled in the art to modify the device and method in U.S. Patent 5,973,638.

The office action first refers to col. 8, lines 25-27 and states that U.S. Patent 5,973,638 teaches “weighting” which, according to the office action, is a well known technique when combining (summing) gain, phase and time interval.

Applicant’s independent claims concern an antenna comprising a number of antenna elements that are used during reception of a signal from a target. At first, all antenna elements are used for producing a radiation diagram. However, in one or more time sequences (e.g., time sequence t1, t2, t3, etc.) the number of antenna elements is reduced for each respective point in time (t1, t2, t3, etc.). Each time the antenna elements are reduced, a different radiation diagram is generated, with different amplitudes of the main lobe and of the side lobes. The different radiation diagrams are added to each other which give the effect that the ratio between the main lobe and the side lobes are increased.

By contrast, U.S. patent 5,973,638 does not teach that any antenna element is turned off in order to create a different radiation diagram. Hence, U.S. patent 5,973,638 is completely silent on the claimed technique and only describes a commonly known technique to sum the gain.

U.S. Patent 6,351,243 teaches that an antenna array in which the antenna elements are positioned in a selected pattern in order to minimize side lobes (col. 2, lines 35-61). Hence U.S. Patent 6,351,243 teaches another solution to the side lobe problem. U.S. Patent 6,351,243 does not teach that the antenna elements can be turned off in order to get different radiation patterns. Hence, U.S. Patent 6,351,243 cannot provide a solution where the different radiation patterns are summed.

D. REQUEST ACKNOWLEDGEMENT OF THE CLAIM FOR PRIORITY

Applicant respectfully requests the Examiner to acknowledge receipt of the priority document.

E. INFORMATION DISCLOSURE STATEMENT

Applicant believes that the Examiner is aware of Applicant's co-pending application 10/520,932, also handled by this Examiner, which has some commonality with the present disclosure.

F. MISCELLANEOUS

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

NUMMINEN, Michael
Serial No. 10/520,935

Atty Dkt: 3670-55
Art Unit: 3662

Respectfully submitted,

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